AC Servo Motor Driver

SIDC SIA series

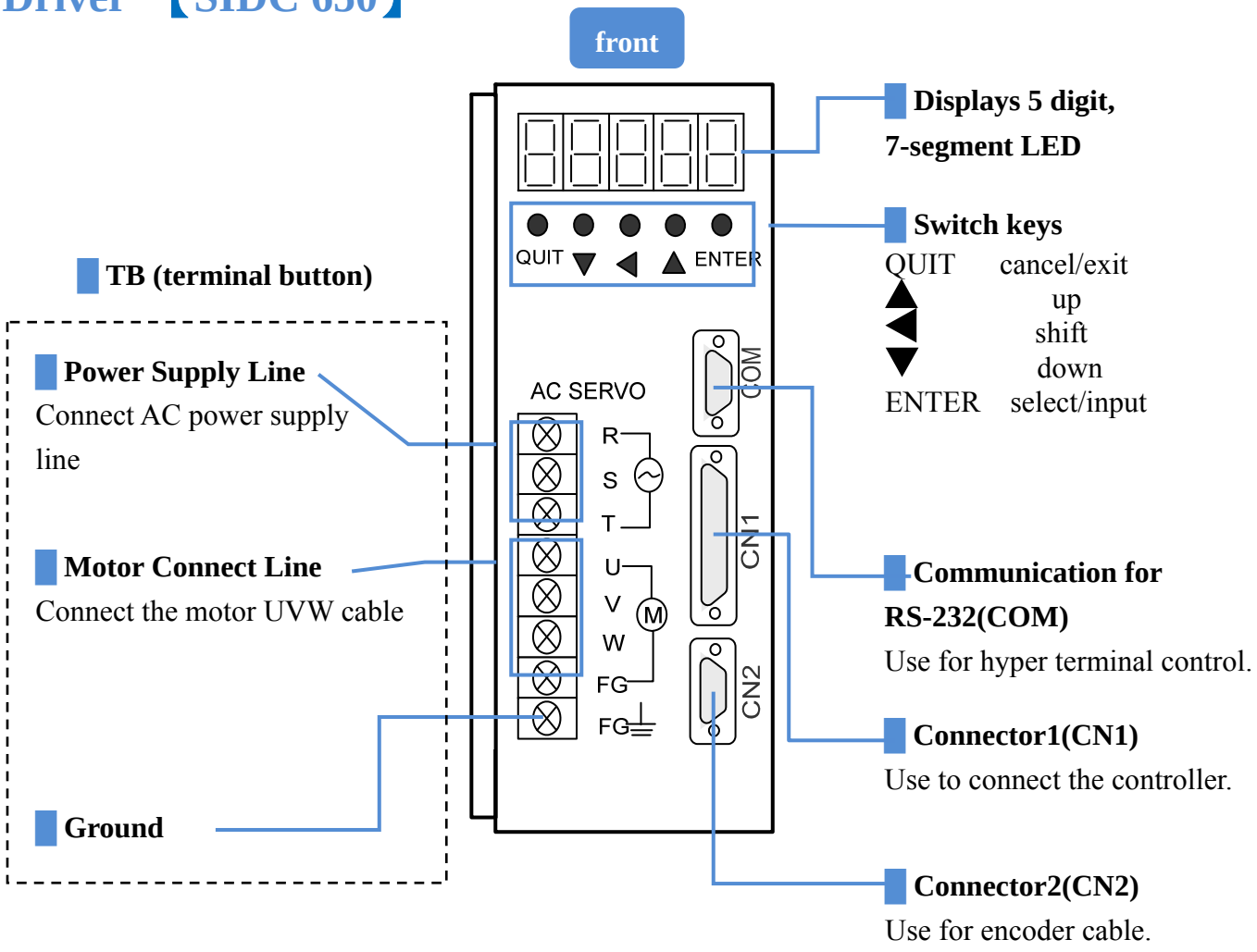
User's Manual

Thank you for purchasing 「SIDC SIA」series.

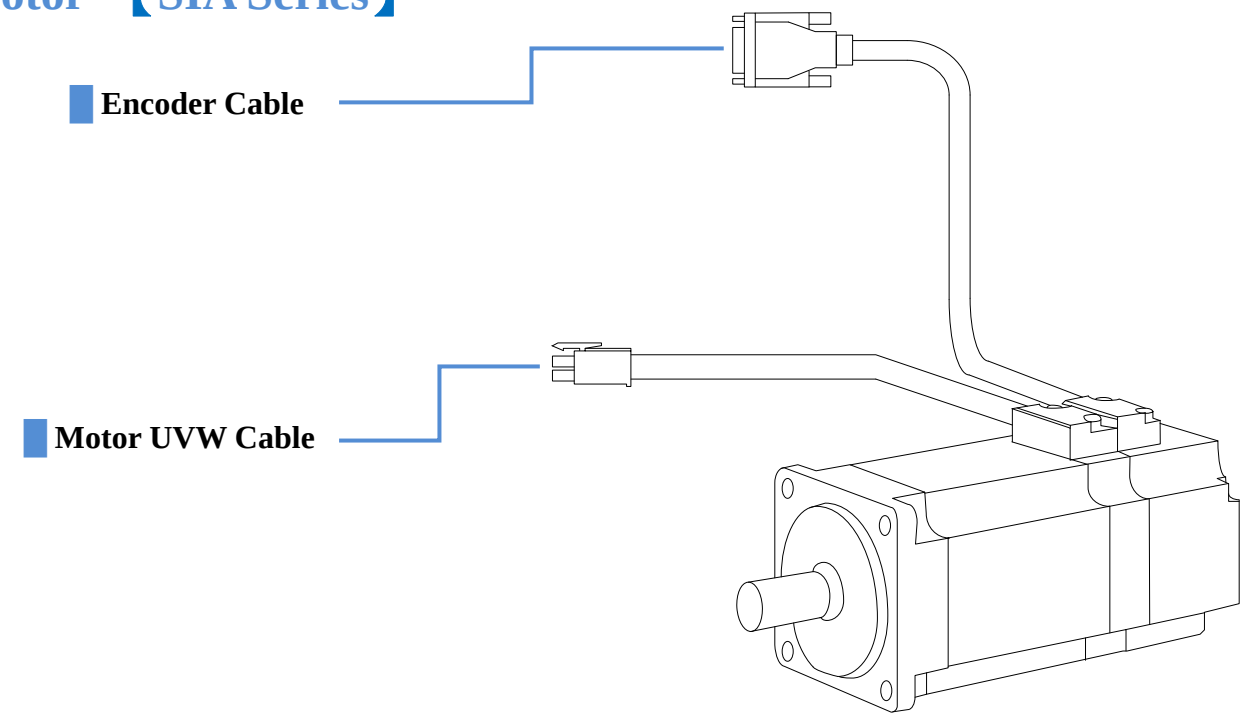
Please read this manual thoroughly before operating the servo system.

ver.080603E

Driver 【SIDC 650】

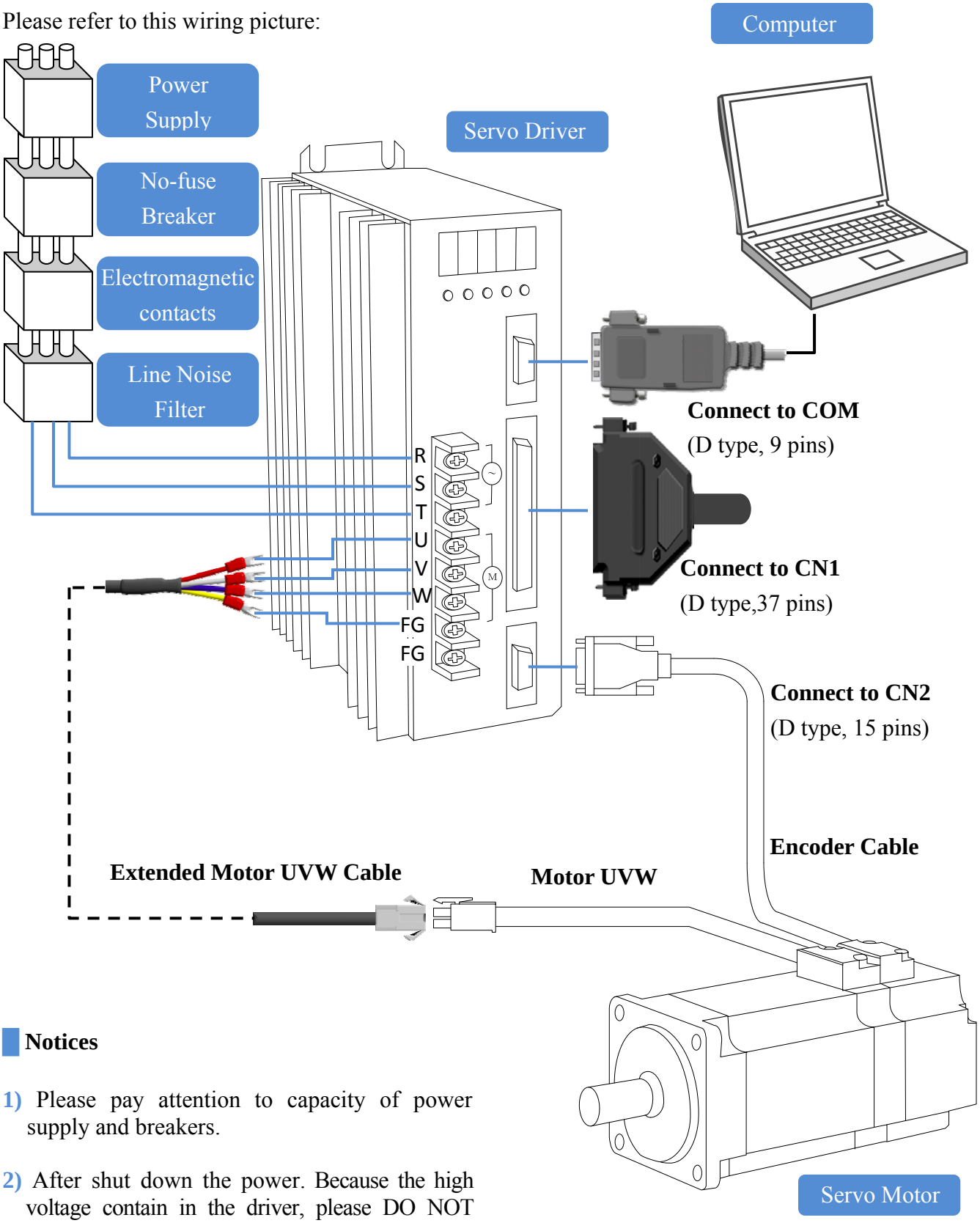


Motor 【SIA Series】



Wiring

Please refer to this wiring picture:

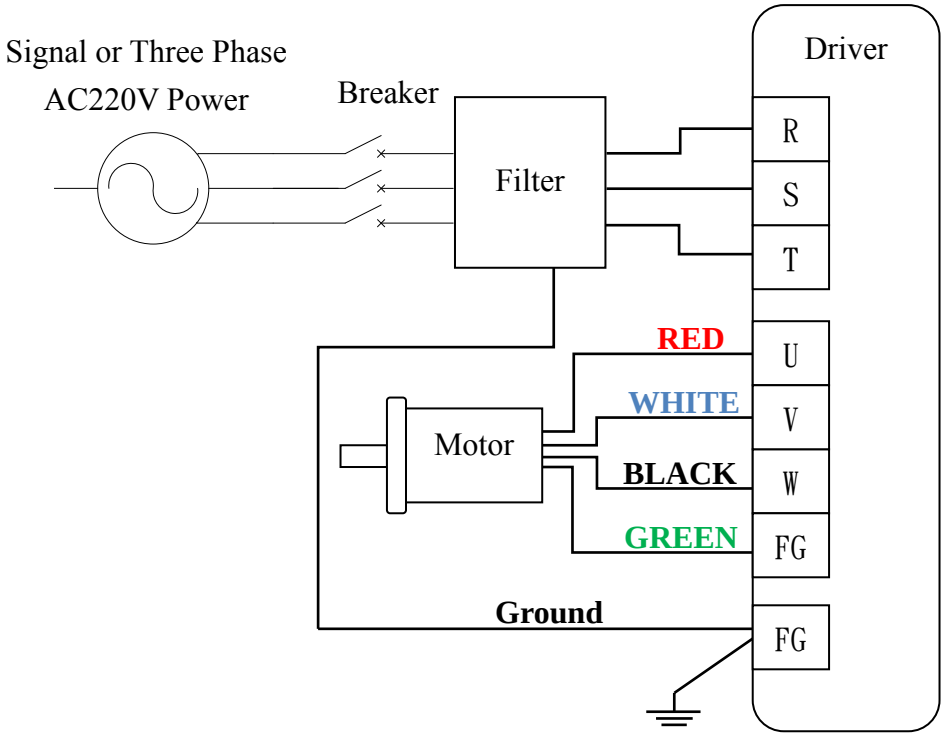


Notices

1) Please pay attention to capacity of power supply and breakers.

2) After shut down the power. Because the high voltage contain in the driver, please DO NOT touch the **TB** terminal(**R**、**S**、**T** and **U**、**V**、**W**) and encoder cable for safe. Please wait until the LED put out, user can touch the terminal button.

Connect the Power and the Motor to Driver (TB)



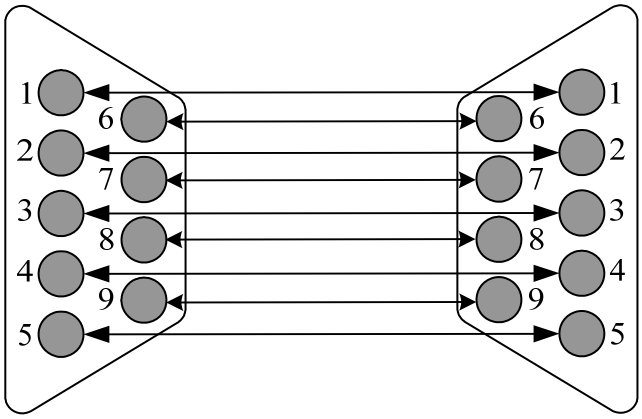
Notices

1) Please confirm the power line is AC 220V.
2) If user connect the signal-phase AC220V, please connect the power lines to **R**、**S** terminal buttons and keep **T** terminal button empty.
3) Please confirm the motor cable color and **U**、**V**、**W** terminal buttons.

Terminal Button(TB)

Name	Symbol	Description
Main circuit power supply	R	Connect to power supply (1-phase or three-phase AC220±15%)
	S	
	T	
Servo motor power	U	Connect the red motor cable
	V	Connect the white motor cable
	W	Connect the black motor cable
The earth terminal of motor	FG	Connect the green motor cable
The earth terminal of driver	FG	Connect to the earth terminal of the servo motor and to the protective earth (PE) of the control box to perform grounding.

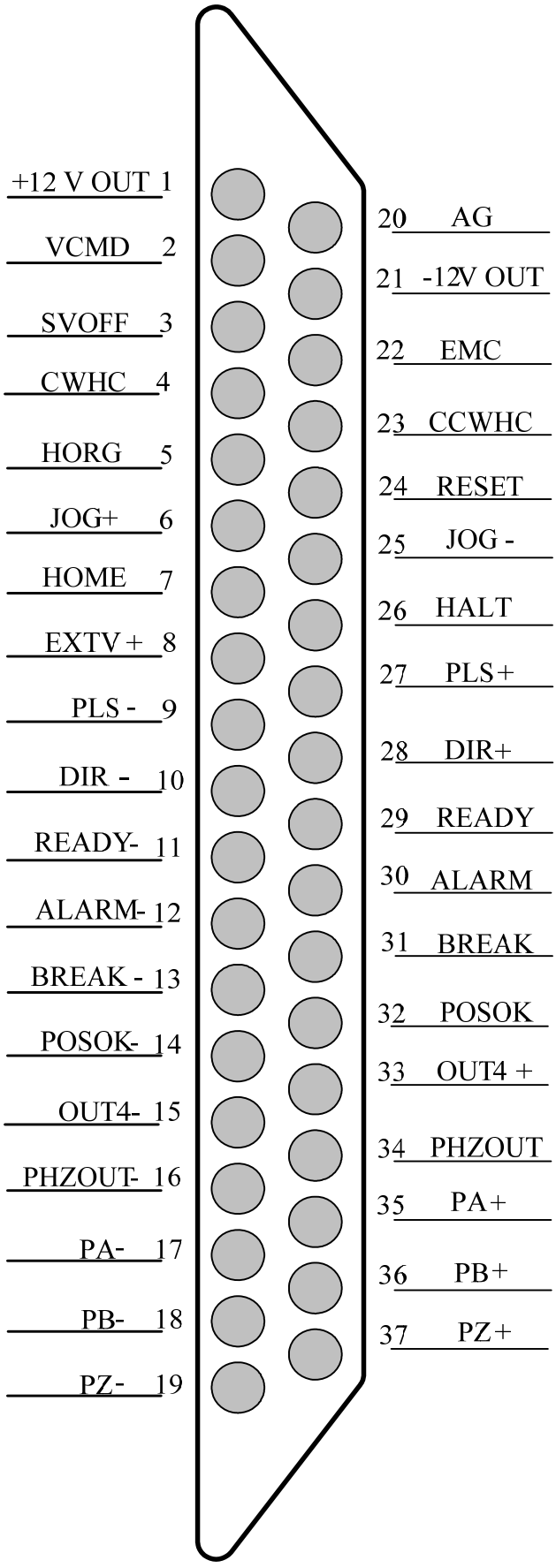
COM (for communication)



NO.	Name	Direction	Description
Pin 1	CD		
Pin 2	TXD	SIDC650→PC	Transmit
Pin 3	RXD	PC→SIDC650	Receive
Pin 4	DSR		Data
Pin 5	GND		Ground
Pin 6	DTR		Data Terminal Ready
Pin 7	CTS		Clear To Send
Pin 8	RTS		Request To Send
Pin 9	RI		

- The setting of COM port:
  Baud Rate: 9600
  Data Bits： 8 Check: None
  Stop Bits： 1 Flow Control: Hardware

CN1 Connector (for controller)



For each operation mode, please refer to the wiring between controller and CN1. (**DG** pin is the negative terminal of external power supply)

I/O Type

Please refer to I/O type at P.16

Suitable Mode

The column of suitable mode shows the applicative rage for control method. The meaning for each word please refer to Parameter **PN01** (**MD**).

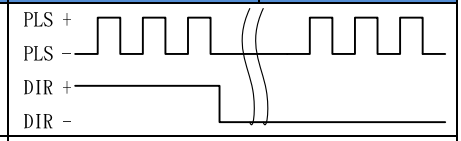
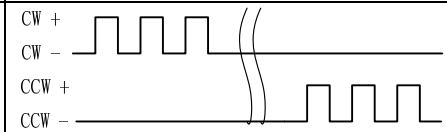
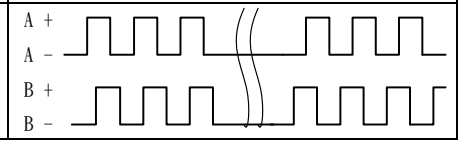
0：Position Control Mode
1：Position Control Mode with Buffer
2：Velocity Control Mode
3：Voltage Control Mode
4：Torque Control Mode
5：Hyper Terminal Control Mode
A：All Control Mode

Pin	Name	Symbol	I/O Type	Suitable Mode
1	±12 V	＋12V		
21	Output	－12V		
Supply ±12VDC/10mA MAX output voltage.				
2	Speed/Torque Input	VCMD	AI	2,3
20		AG		
The speed and torque command can input **VCMD** pin, and **AG** is the analog ground. The Max torque and speed is corresponding to ±10V **VCMD** input voltage.				
3	**Servo off**	**SVOFF**	**SI**	**A**
When open-circuit this pin and **DG** pin, driver will servo on. When short-circuit this pin and **DG** pin, driver will servo off. (Please refer to **PN04** parameter)				
22	**Emergency Stop**	**EMC**	**SI**	**A**
When short-circuit this pin and **DG** pin, driver will immediately execute emergency stop and servo off. (Please refer to **PN04** parameter)				
4	**CW Drive Inhibit**	**CWHC**	**SI**	**A**
When short-circuit this pin and **DG** pin, it means that travel-exceeding has happened. (Please refer to **PN05** parameter)				

23	CCW Drive Inhibit	CCWHC	SI	A
	When short-circuit this pin and **DG** pin, it means that travel-exceeding has happened. (Please refer to **PN05** parameter)			
5	Home Signal	HORG	SI	1,5
	When short-circuit this pin and **DG** pin, it means that mechanical home signal has inputted. (Please refer to **PN03** parameter)			
24	Reset	RESET	SI	A
	When short-circuit this pin and **DG** pin, it will reset the driver. (Reset driver can also remove the alarm.)			
6	JOG Forward	JOG+	SI	1
	When short-circuit this pin and **DG** pin, motor will jog forward.			
25	JOG Backward	JOG-	SI	1
	When short-circuit this pin and **DG** pin, motor will jog backward.			
7	Homing	HOME	SI	1
	When short-circuit this pin and **DG** pin (ON→OFF), motor will rotate back to the mechanical home.			
26	Pulse Input Inhibit	HALT	SI	1
	When short-circuit this pin and **DG** pin (ON→OFF), the input pulses will be invalid.			
8	External +24V Power	+24V		A
	User need to supply external +24V power for I/O.			

27	Pulse Input	PLS+	PI	0,1
9		PLS-		
28	Direction Input	DIR+		
10		DIR-		

SIDC650 can accept three command types. (Please refer to **PN02**)：

Command Type	Pin Status	
	Forward	Backward
Pulse+Dir		
CW/CCW		
AB Phase		

29 11	Servo Ready	READY	SO	A
After power on the driver without any alarms, **READY** signal will be ON. (Please refer to **PN07** parameter)				
30 12	Alarm	ALARM	SO	A
If any alarm occurring, **ALARM** signal will be ON. (Please refer to **PN07** parameter)				
31 13	Holding Break	BREAK	SO	A
When servo off, the **BREAK** pin will output ON. This pin can be used to control the relay of magnetic break.(Please refer to **PN06** parameter)				
32 14	In Position	POSOK	SO	0,1
Please refer to **PN18** parameter				
33 15	Output 4	OUT4	SO	A
This output pin is reserved by manufactory.				
34 16	Z-phase Output	PHZOUT	SO	A
The **PHZOUT** pin signal is the same as the **PZ+** signal, and the type of this pin is open collector.				

35	Encoder A-Phase Output	PA	PO	A
17		$\overline{PA}$		
36	Encoder B-Phase Output	PB		
18		$\overline{PB}$		
37	Encoder Z-Phase Output	PZ		
19		$\overline{PZ}$		
Output the encoder signal which be inputted to driver. The A-phase leads B-phase 90 degrees, when view from the shaft end. The types of these pins are line-drive.				
	Shield	FG		A

CN2 Connector (for encoder)